L'exemplaire filmé fut reproduit grâce à la générosité de:

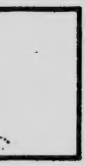
Bibliothèque
Agriculture Canada

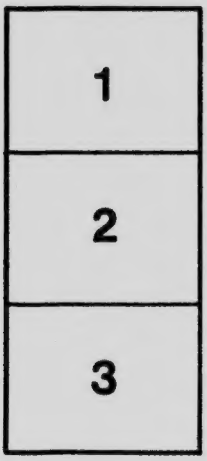
Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

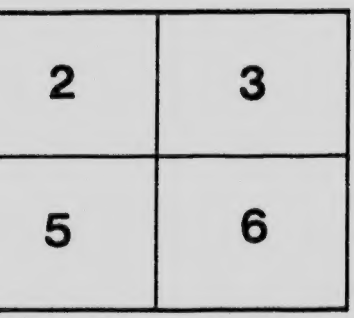
Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la dernière page qui comporte une empreinte d'impression ou d'illustration, soit par le second plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustration et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaîtra sur la dernière image de chaque microfiche, selon le cas: le symbole → signifie "A SUIVRE", le symbole ∇ signifie "FIN".

Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.







ITUTE LIBRARY, WEST BLOCK, OTTAWA.
JAN 5 1920 PLEASE RETURN.

C
(New

PROVINCE OF BRITISH COL

DEPARTMENT OF AGRICULTU
(HORTICULTURAL BRANCH).

ANTHRACNOSE *of* APP

THIS disease is known also by the names of
and "Pacific Coast canker." With the p
apple-scab, it is the most serious disease that the
Lower Mainland and Island sections of Britis
contend with. It also occurs to some extent in
other districts with moderate rainfall, but is abs
Belt."

Showing effect of anthracnose on branch of

The disease is chiefly destructive to apple-tree
also attacked. The fruit may be infected, the
causing a rot, but the chief injury is to the fra
itself. Cankers develop in the bark which may

CIRCULAR No. 45
(New Horticultural Series).

H COLUMBIA.

ICULTURE
CH).

APPLE-TREES

nes of "black-spot canker"
n the possible exception of
hat the apple-grower of the
f British Columbia has to
xtent in the Kootenays and
t is absent from the "Dry

anch of apple-tree.

ple-trees, but pear-trees are
d, the disease in this phase
the framework of the tree
h may extend up and down

a limb for several inches, often nearly or entirely encircling the limb so that everything above the girdling canker dies. In this way the greater part of the one- and two-year-old growth on a tree may be killed as well as some of the older branches, while the larger limbs are seriously damaged in the same way. Young trees may be killed outright by the canker girdling the trunk.

The disease is due to a fungus known under several technical names (*Neofabræa malicorticis; Gloeosporium malicorticis*, etc.). Spores of the fungus are spread over the bark during the fall rains, germinate and produce infection. One spore germinating successfully is all that is necessary to produce even a large canker. Most large cankers, however, are due to two or more separate cankers meeting and becoming confluent. The canker first appears as a dark water-soaked spot which remains pretty much the same through the winter. In the spring it enlarges rapidly until early in May, when it begins to dry up. These cankers do not develop further. The killed bark shrinks down (or falls away on the young twigs) and shows a well-marked line between the canker and the healthy tissue. On the dead bark, during the summer, small raised points (pustules) begin to appear. When these are mature, in late summer or early fall, they are filled with large numbers of minute spores, which are scattered and produce infection, as already mentioned, during the fall rains.

CONTROL MEASURES.

The grower's first line of defence is to protect his trees against infection. This can be done by spraying them with Bordeaux mixture. To be fully effective, however, it must be done *before the heavy fall rains begin*. This is where many growers do defective work. Early varieties, which are picked by the time spraying should be done, are sprayed in time. Later varieties, with the fruit still on the tree, are allowed to go until the fruit is picked, for fear of staining it. It is then often too late to prevent a great deal of infection.

From some experimental spraying done by the Department of Agriculture, it seems probable that in many cases there may be little or no extra cost incurred from having to wipe the fruit when it is necessary to spray before picking. Baldwin apples sprayed with 3-4-40 Bordeaux in the first week of September were picked at the end of October and placed in ordinary shed storage. When packed in January there was found to be no Bordeaux adhering to them and no extra cost in packing them for market. Whether this would be so in all cases we cannot say, but even if wiping is necessary with late varieties, the grower can only choose between incurring this extra cost and allowing his trees to be seriously damaged year after year.

It will be instructive to give some figures from the aforesaid experiments, which were conducted at Keating, Vancouver Island. Badly

infected trees sprayed with 3-4-40 Bordeaux on September 6th, 1916, and examined in May, 1917, showed that 11 per cent. of the one- and two-year-old branches were attacked by cankers. Similar trees sprayed with Bordeaux mixture of *twice this strength* on November 8th showed cankers on 77 per cent. of the one- and two-year-old branches. As most of these infected branches died, the damage to the tree in the latter case can be readily seen. Trees receiving both sprays showed 7 per cent. cankers.

While the actual dates are given in this case, it is necessary for the grower in any particular locality to use his own judgment and experience in this respect. The essential thing is *to get the first spray on before the heavy rains begin.*

RECOMMENDATIONS.

(1.) Spray with Bordeaux mixture, 3-4-40 (3 lb. bluestone, 4 lb. lime, 40 gallons water) where the fruit is unpicked, 4-4-40 (4 lb. bluestone, 4 lb. lime, 40 gallons water), or as strong as 6-6-40, where the fruit is off. It is doubtful if it is worth while using anything stronger than this.

(2.) In very badly infested orchards it may be advisable to repeat with 4-4-40 Bordeaux mixture from six to eight weeks later, if the first spray is badly washed off.

(3.) Burn all prunings, since cankers on them can still produce spores.

(4.) Keep cankers painted over. This will help to prevent more spores from them being distributed.

(5.) Loose bark in cankers should be pulled out and burned, not thrown on the ground where it may still produce spores.

(6.) Pick up and destroy decaying fruit.

Victoria, B.C., issued August, 1918.

This circular has been prepared by J. W. Eastham, B.Sc., Provincial Plant Pathologist, at the request of the Horticultural Branch.

Copies of this circular may be obtained free of charge on application to the Horticultural Branch, Department of Agriculture, Victoria, B.C., or from local branch offices of the Department.

VICTORIA, B.C.:
Printed by WILLIAM H. CULLIN, Printer to the King's Most Excellent Majesty.
1918.